




and in which unless otherwise stated, the alkyl radicals are straight or branched and contain 1 to 6 carbon atoms; the cycloalkyl radicals contain 3 to 4 carbon atoms; the chain  at the 16-position means:

5 when R'' is other than -OR''' or -NR₃R₄, the R epimer or mixtures of the R and S epimers in which the R epimer is predominant, and when R'' is -OR''' or -NR₃R₄, the R and S epimers and mixtures thereof, as well as its salts.

10 2. Derivative of group A streptogramins according to claim 1, characterized in that R₁ is a radical -NR'R'' for which R' is a hydrogen atom or a methyl radical, and R'' is a hydrogen atom, an alkyl, cycloalkyl, allyl, propynyl, benzyl or -OR''' radical, 15 R''' being an alkyl radical containing 1 to 6 carbon atoms, an allyl or propynyl radical, or R'' represents -NR₃R₄, it being possible for R₃ and R₄ to represent a methyl radical, or to form together with the nitrogen atom to which they are attached a saturated or 20 unsaturated 4- or 5-membered heterocycle which may, in addition, contain another heteroatom chosen from nitrogen, oxygen or sulphur, R₂ is a hydrogen atom or a methyl or ethyl radical, and the bond --- represents a single bond or a double bond, as well as their salts 25 and in which the chain  at the 16-position means: when R'' is other than -OR''' or -NR₃R₄, the R epimer or mixtures of the R and S epimers in which the R epimer

is predominant, and when R'' is -OR''' or -NR₃R₄, the R and S epimers and mixtures thereof.

a 3. Derivative of group A streptogramins according to claim 1 ~~or 2~~, characterized in that R₁ is a radical -NR'R'' for which R' is a hydrogen atom or a methyl radical, and R'' is a hydrogen atom, an alkyl radical containing 1 to 4 carbon atoms, a cycloalkyl, allyl, propynyl, benzyl or -OR''' radical, R''' being an alkyl radical containing 1 to 3 carbon atoms, or an allyl or propynyl radical, or R'' represents -NR₃R₄, it being possible for R₃ and R₄ to form together with the nitrogen atom to which they are attached a 5-membered saturated heterocycle, R₂ is a methyl or ethyl radical, and the bond --- represents a single bond or a double bond, as well as their salts and in which the chain  at the 16-position means: when R'' is other than -OR''' or -NR₃R₄, the R epimer or mixtures of the R and S epimers in which the R epimer is predominant, and when R'' is -OR''' or -NR₃R₄, the R and S epimers and mixtures thereof

4. Derivative of group A streptogramins according to claim 1, characterized in that it is (16R)-16-dimethylamino-16-deoxopristinamycin II_A as well as its salts.

25 5. Derivative of group A streptogramins according to claim 1, characterized in that it is (16R)-16-methoxyamino-16-deoxopristinamycin II_B as well as its salts.

6. Derivative of group A streptogramins according to claim 1, characterized in that it is (16R)-16-ethoxyamino-16-deoxopristinamycin II_B as well as its salts.

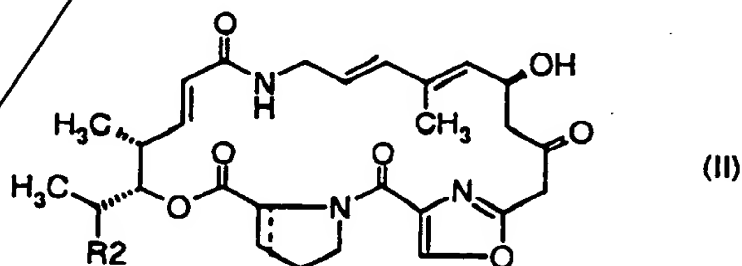
5 7. Derivative of group A streptogramins according to claim 1, characterized in that it is (16R)-16-allyloxyamino-16-deoxopristinamycin II_B as well as its salts.

10 8. Derivative of group A streptogramins according to claim 1, characterized in that it is (16R)-16-methoxyamino-16-deoxopristinamycin II_A as well as its salts.

15 9. Process for preparing a streptogramin derivative according to claim 1, characterized in that an amine of general formula:



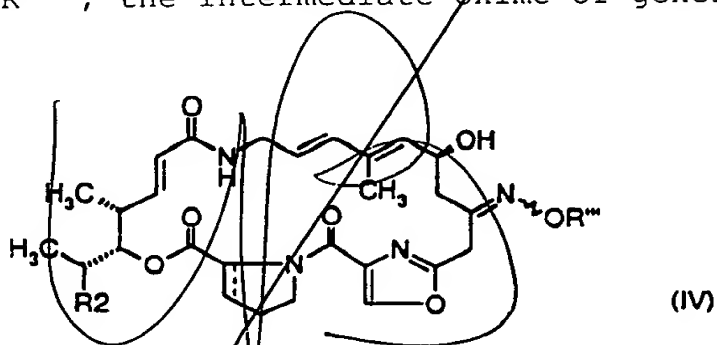
in which R'' is as defined above, is reacted with a component of natural pristinamycin of general formula:



20 in which R₂ is as defined in claim 1, and then an agent for reducing the intermediate enamine (or oxime) obtained is caused to react and, when it is desired to obtain a streptogramin derivative according to claim 1

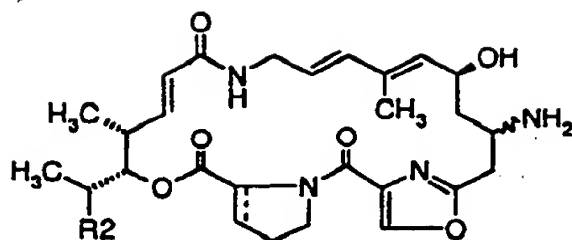
for which R' is a methyl radical, a second reductive amination is carried out by the action of formaldehyde or of a derivative generating formaldehyde in situ, followed by the reduction of the intermediate enamine, the product obtained is optionally converted to a salt, and/or its R epimer is separated.

10. Process according to claim 9, characterized in that to prepare a streptogramin derivative according to claim 1 for which R'' is a radical -OR''', the intermediate oxime of general formula:



in which R₂ and R''' are as defined in claim 1, is isolated, and then converted by reduction to a streptogramin derivative according to claim 1 for which R' is a hydrogen atom, which may be optionally used in the subsequent reductive amination operation.

11. Process for preparing a streptogramin derivative according to claim 1, characterized in that the ketone corresponding to the desired R'' radical is reacted with the amine-containing derivative of general formula:



(v)

in which R₂ is as defined above, and then when it is desired to obtain a streptogramin derivative according to claim 1, for which R' is a methyl radical, a second reductive amination is carried out, by the action of formaldehyde or of a derivative generating formaldehyde in situ and the intermediate enamine is reduced, and the product obtained is optionally converted to a salt, and/or its R epimer is separated.

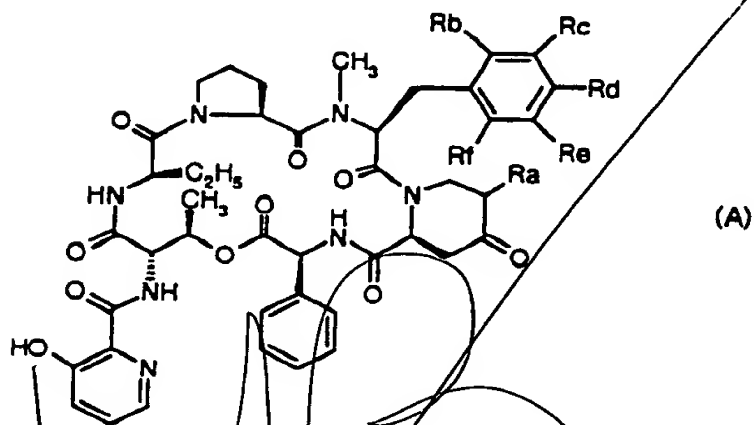
12. Combinations characterized in that they comprise a group A streptogramin derivative according to claim 1 and a group B streptogramin derivative.

13. Combinations according to claim 12, characterized in that the group B streptogramin derivative is chosen from natural components or semisynthetic components.

14. Combinations according to claim 12, characterized in that the group B streptogramin derivative is chosen from pristinamycin I_A, pristinamycin I_B, pristinamycin I_C, pristinamycin I_D, pristinamycin I_E, pristinamycin I_F, pristinamycin I_G, virginiamycin S₁, S₃ or S₄, vernamycin B or C or etamycin.

15. Combinations according to claim 12, characterized in that the group B streptogramin derivative is chosen from the streptogramin derivatives of general formula:

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in which,

1. Rb, Rc, Re and Rf are hydrogen atoms, Rd is a hydrogen atom or a dimethylamino radical, and Ra is a radical of structure $-\text{CH}_2\text{R}'\text{a}$ for which R'a is 3-pyrrolidinylthio or 3- or 4-piperidylthio which may be substituted with alkyl, or alkylthio substituted with 1 or 2 hydroxysulphonyl, alkylamino, dialkylamino (itself optionally substituted with mercapto or dialkylamino), or substituted with 1 or 2 optionally substituted piperazine rings, morpholino, thiomorpholino, piperidino, 1-pyrrolidinyl, 2-, 3- or 4-piperidyl or 2- or 3-pyrrolidinyl (which may be substituted with alkyl), or alternatively Ra is a radical of structure $=\text{CHR}'\text{a}$ for which R'a is

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- 3-pyrrolidinylamino, 3- or 4-piperidylamino,
 3-pyrrolidinylloxy, 3- or 4-piperidylloxy,
 3-pyrrolidinylthio, 3- or 4-piperidylthio which
 may be substituted with alkyl, or R'a is
 5 alkylamino, alkyloxy or alkylthio substituted with
 1 or 2 hydroxysulphonyl, alkylamino, dialkylamino
 (itself optionally substituted with dialkylamino),
 or with trialkylammonio, 4- or 5-imidazolyl, or
 with 1 or 2 optionally substituted piperazine
 10 rings, morpholino, thiomorpholino, piperidino,
 1-pyrrolidinyl, 2-, 3- or 4-piperidyl or 2- or
 3-pyrrolidinyl (which may be substituted with
 alkyl), or
 Ra is a 3- or 4-quinuclidinylthiomethyl radical,
 15 or alternatively
2. Ra is a hydrogen atom and
- a) either Rb, Re and Rf are hydrogen atoms, Rd is a
 radical -NHCH_3 or $\text{-N(CH}_3)_2$ and Rc is a chlorine or
 20 bromine atom, or represents an alkenyl radical
 containing 3 to 5 carbon atoms [if Rd is $\text{-N(CH}_3)_2$],
- b) or Rb, Rd, Re and Rf represent a hydrogen atom and
 Rc is a halogen, or an aminomonoalkyl,
 25 aminodialkyl, alkyloxy, trifluoromethyloxy,
 thioalkyl, C_1 to C_3 alkyl or trihalomethyl radical,
- c) or Rb, Rc, Re and Rf represent a hydrogen atom and

Rd is a halogen, or an ethylamino, diethylamino or methylethylamino, alkyloxy or trifluoromethyloxy, thioalkyl, C₁ to C₆ alkyl, aryl or trihalomethyl radical,

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d) or Rb, Re and Rf represent a hydrogen atom and Rc is halogen or an aminomonoalkyl or aminodialkyl, alkyloxy or trifluoromethyloxy, thioalkyl or C₁ to C₃ alkyl radical, and Rd is halogen or an amino, aminomonoalkyl or aminodialkyl, alkyloxy or trifluoromethyloxy, thioalkyl, C₁ to C₆ alkyl or trihalomethyl radical,

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e) or Rc, Re and Rf represent a hydrogen atom and Rb and Rd represent a methyl radical.

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16. Pharmaceutical composition,

characterized in that it contains at least one streptogramin derivative according to one of claims 1 to 8, optionally in combination with a group B streptogramin derivative, and/or optionally in combination with any compatible and pharmaceutically acceptable diluent or adjuvant.

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B1
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